

Unit 3 Lesson 2 Homework

Complete the evens. You may do odds for extra practice.

Practice Exercises

In Exercises 1–8, write each equation in its equivalent exponential form.

1. $4 = \log_2 16$

2. $6 = \log_2 64$

3. $2 = \log_3 x$

4. $2 = \log_9 x$

5. $5 = \log_b 32$

6. $3 = \log_b 27$

7. $\log_6 216 = y$

8. $\log_5 125 = y$

In Exercises 9–20, write each equation in its equivalent logarithmic form.

9. $2^3 = 8$

10. $5^4 = 625$

11. $2^{-4} = \frac{1}{16}$

12. $5^{-3} = \frac{1}{125}$

13. $\sqrt[3]{8} = 2$

14. $\sqrt[3]{64} = 4$

15. $13^2 = x$

16. $15^2 = x$

17. $b^3 = 1000$

18. $b^3 = 343$

19. $7^y = 200$

20. $8^y = 300$

In Exercises 21–42, evaluate each expression without using a calculator.

21. $\log_4 16$

22. $\log_7 49$

23. $\log_2 64$

24. $\log_3 27$

25. $\log_5 \frac{1}{5}$

26. $\log_6 \frac{1}{6}$

27. $\log_2 \frac{1}{8}$

28. $\log_3 \frac{1}{9}$

29. $\log_7 \sqrt{7}$

30. $\log_6 \sqrt{6}$

31. $\log_2 \frac{1}{\sqrt{2}}$

32. $\log_3 \frac{1}{\sqrt{3}}$

33. $\log_{64} 8$

34. $\log_{81} 9$

35. $\log_5 5$

36. $\log_{11} 11$

37. $\log_4 1$

38. $\log_6 1$

39. $\log_5 5^7$

40. $\log_4 4^6$

41. $8^{\log_8 19}$

42. $7^{\log_7 23}$